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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/541,525

**Applicant(s)**

KUMAZAWA ET AL.

**Examiner**

Andrew C. Lee

**Art Unit**

2419

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 July 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-13 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 07 July 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-893)  
Paper No(s)/Mail Date 8/18/2005, 7/07/2005  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This Office Action in response to the Application no.10541525 filed on 7/07/2005 is entered. Claims 1 – 13 are hence entered and presented for examination.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on 8/18/2005, 7/07/2005 was filed, and the submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Drawings***

4. The drawings (Fig. 1, Fig. 2, Fig. 3) are objected to because the rectangular boxes (as indicated by numeral 11, 12, 13, 14, 15, 16), the cloud/network (as indicated by numeral 2), and the ellipse/network (as indicated by numeral 1) as disclosed in Fig.1 are not labeled with text; the rectangular boxes (as indicated by numeral 21, 22, 23, 24, 25, 26, 27, 28) as disclosed in Fig. 2 are not labeled with text; the rectangular boxes (as indicated by numeral 31, 32, 33, 34, 35, 36, 37, 38, 39, 40) as disclosed in Fig. 3 are not labeled with text. Regarding Fig. 1, Fig. 2, and Fig.3, all the connecting lines should also be identified with numbers and with the direction of flows (such as arrows).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed subject matters "a stop message receiving section", "a routing capability message generating section", a capability message transmitting section" as disclosed in claim 6; the claimed subject matters "a routing stop message generating section", and "a stop message transmitting section" as disclosed in claim 7; the claimed subject matter "a capability message receiving section" as disclosed in claim 8; the claimed subject matters " a

terminal receiving section", and "a router switch section" as disclosed in claim 12 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

6. Claim 1 is objected to because of the following informalities:

Regarding claim 1, the clause "characterized in that:" should be corrected as "comprising steps of:". This indicates that the method comprising steps to perform. Appropriate correction is required.

Regarding claim 2, claim 2 has the same deficiencies as stated in claim 1.

Regarding claim 3, the indefinite article "A" of the clause "A routing control method" should be corrected as "The".

Regarding claims 4, 5, 7, 8, 9, 10, 11, 13, have the same deficiencies as indicated in claim 3, the indefinite article "A" should be corrected as "The".

#### ***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Regarding claims 1 – 13, the claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

#### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section

351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by D'Annunzio et al. (US 20030069990 A1).

**Regarding claim 1**, D'Annunzio et al. disclose a routing control method of a local area network (LAN) comprising one or more terminals having at least one LAN interface, one or more routers having a routing function performing a relay of data between the LAN and an external network, and a LAN medium connecting the terminals and routers mutually (Fig. 1, paragraphs [0018], [0019]), the routing control method characterized in that: if the routing function of the router is disabled or predicted to become disabled, during execution of the routing function the router multicasts a routing stop message notifying stop of its routing function, after which another of the routers, having received the routing stop message, multicasts a routing capability message when the router can execute the routing function, so that the routing function is switched (page 3, claim 1, col. 2, lines 1 – 28).

10. Claims 6, 7, 8, 10, 12, 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Shinomiya (US 20030037165 A1).

**Regarding claim 6**, Shinomiya discloses a router comprising: a stop message receiving section for receiving a routing stop message giving the routing stop time, the time remaining until stop of routing function, from another router which is executing the router function (Fig. 4, element 37, ICMP message processor, paragraph [0081], [0082]); a master transition deciding section for deciding whether or not a router can execute

the routing function when the message receiving section receives a routing stop message (paragraph [0095]); a transition time calculating section for calculating the time required to start routing function when the master transition deciding section decides that routing function can be executed (paragraphs [0093], [0094]); a routing capability message generating section for generating a routing capability message notifying the required time until routing is enabled (paragraphs [0099], [0100]); and a capability message transmitting section for transmitting the routing capability message to the nodes in the local area network to which the router is connected (paragraph [0100]).

**Regarding claim 7**, Shinomiya discloses a router according to claim 6, further including a status monitor section for monitoring the status of connection with an external network and deciding whether or not to cancel the connection (Fig. 4, element 39, packet monitor, paragraph [0071]); a routing stop time calculating section for calculating the time remaining until routing stop when the status monitor section decides to cancel connection during execution of a routing function (paragraph [0069]); a routing stop message generating section for generating a routing stop message giving the time calculated by the routing stop time calculating section (Fig. 4, element 37, ICMP message processor, paragraph [0081], [0082]); and a stop message transmitting section for transmitting the routing stop message to a node on a local area network to which the router is connected (element 37, ICMP message processor, paragraphs [0081], [0082], [0100]).



**Regarding claim 8**, Shinomiya discloses a router according to claim 7, further including a buffer for storing a message to be sent to the external network, received from the local area network to which the router is connected after the stop of routing function, and a capability message receiving section for receiving a routing capability message from another router, whereby, when the routing capability message is received, the message stored in the buffer is transmitted to the router which was the source of the message (paragraphs [0104] – [0107]).

**Regarding claim 10**, Shinomiya discloses a router according to claim 7, wherein, if the routing stop time in the routing stop message received is equal to or smaller than a predetermined time, it is decided that the router which was the source of the routing stop message is under transition into a stop of routing function (“a predetermined period”; paragraph [0069]).

**Regarding claim 12**, Shinomiya discloses a terminal comprising: a terminal receiving section for receiving a routing stop message giving a routing stop time, the time remaining until stop of routing function from a first router now executing the routing function, and a routing capability message giving a routing capability time, the time required until routing function by a second router is enabled (Fig. 4, element 37, ICMP message processor, paragraphs [0081], [0082]); and a router switch section for switching a communication to be sent to an external network from the first router over to the second router by a timing depending upon the routing stop message and routing

capability message received by the terminal receiving section (paragraphs [0094], [0095]).

**Regarding claim 13**, Shinomiya discloses a terminal according to claim 12, wherein the switching by the router switch section is done after the lapse of the routing stop time and at the lapse of the routing capability time (paragraph [0189]).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2 – 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'Annunzio et al. (US 20030069990 A1) in view of Li et al. (5473599).

**Regarding claim 2**, D'Annunzio et al. disclose a routing control method comprising: a step that a first router monitors the status of connection with an external network and when it is decided to cancel the connection, the first router transmits a message notifying a routing stop time, the time remaining until stop of routing function, to the nodes in the local area network to which the router is connected (page 1, paragraph [0009]; page 3, claim 1, col. 2, lines 1 – 28);

D'Annunzio et al. do not disclose a step that a second router receives the routing stop message, and if the second router can execute the routing function, it transmits a

routing capability message notifying the transition time, the time required to enable routing function, to the nodes in the local area network to which the router is connected; and a step that the nodes receiving the routing stop message and the routing capability message switch the destination of their transmissions from the first router over to the second router.

Li et al. in the same field of endeavor teach a step that a second router receives the routing stop message, and if the second router can execute the routing function, it transmits a routing capability message notifying the transition time, the time required to enable routing function, to the nodes in the local area network to which the router is connected (col. 2, lines 44 – 64); and a step that the nodes receiving the routing stop message and the routing capability message switch the destination of their transmissions from the first router over to the second router (col. 3, lines 25 – 35, col. 9, lines 6 – 12).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of D'Annunzio et al. to include the features of a step that a second router receives the routing stop message, and if the second router can execute the routing function, it transmits a routing capability message notifying the transition time, the time required to enable routing function, to the nodes in the local area network to which the router is connected; and a step that the nodes receiving the routing stop message and the routing capability message switch the destination of their transmissions from the first router over to the second router as taught by Li et al. One of ordinary skill in the art would be motivated to do so for

providing a system and protocol for routing data packets from a host on a LAN through a virtual router (as suggested by Li et al., see col. 2, lines 17 – 19).

**Regarding claim 3**, D'Annunzio et al. disclose a routing control method according to claim 2, including a step that if the first router receives a message directed toward an external network after the stop of its router function, stores the message (Fig. 1, paragraph [0021]); and a step that after the first router receives the routing capability message from the second router, transfers the stored message to the second router ( paragraph [0022]).

**Regarding claim 4**, D'Annunzio et al. disclose a routing control method according to claim 3, wherein after the first router receives the routing capability message, it transfers the stored message to the second router after the routing capability time has lapsed (paragraph [0023]).

**Regarding claim 5**, D'Annunzio et al. disclose a routing control method according to claim 2, wherein the second router decides that the routing function of the first router has stopped if the routing stop time in the message received from the first router is equal to or smaller than a predetermined time (paragraph [0023]).

13. Claims 9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinomiya (US 20030037165 A1) in view of Flinck et al. (US 7099326 B2).

**Regarding claim 9**, Shinomiya discloses a router according to claim 7, wherein the routing stop message is a router advertisement message of ICMP (paragraph [0182]).

Shinomiya does not disclose wherein the routing stop message is a router advertisement message of ICMPv6 and has the routing stop time set in the lifetime field thereof, and the routing stop message is sent to the nodes in the LAN.

Flinck et al. in the same field of endeavor disclose wherein the routing stop message is a router advertisement message of ICMPv6 and has the routing stop time set in the lifetime field thereof, and the routing stop message is sent to the nodes in the LAN ("ICMPv6"; Fig. 7, Fig. 8, col. 4, lines 59 – 66).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Shinomiya to include the features of wherein the routing stop message is a router advertisement message of ICMPv6 and has the routing stop time set in the lifetime field thereof, and the routing stop message is sent to the nodes in the LAN as taught by Flinck et al. One of ordinary skill in the art would be motivated to do so for providing a plurality of routers constituting a virtual router perform routing function concurrently based on dynamically set a packet condition for defining the routing object by each router (as suggested by Flinck et al., see paragraph [0014]).

**Regarding claim 11**, Shinomiya discloses a router according to claim 7, wherein the routing capability message is a router advertisement message of ICMP (paragraph [0182]).

Shinomiya does not disclose wherein the routing capability message is a router advertisement message of ICMPv6 and the time required until routing function is enabled is set in the reachable time field thereof, and the routing capacity message is sent to the nodes in the LAN.

Flinck et al. in the same field of endeavor disclose wherein the routing capability message is a router advertisement message of ICMPv6 and the time required until routing function is enabled is set in the reachable time field thereof, and the routing capacity message is sent to the nodes in the LAN ("ICMPv6"; Fig. 7, Fig. 8, col. 4, lines 59 – 67, col. 5, lines 1 – 3).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Shinomiya to include the features of wherein the routing capability message is a router advertisement message of ICMPv6 and the time required until routing function is enabled is set in the reachable time field thereof, and the routing capacity message is sent to the nodes in the LAN as taught by Flinck et al. One of ordinary skill in the art would be motivated to do so for providing a plurality of routers constituting a virtual router perform routing function concurrently based on dynamically set a packet condition for defining the routing object by each router (as suggested by Flinck et al., see paragraph [0014]).

**Conclusion**

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) loele et al. (US 20020073337 A1).
- b) Schroeder et al. (5088091).
- c) Garg et al. (US 6865591 B1).

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571)272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner, Art Unit 2419  
<10/06/2008>  
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